R_s=Area of the cefmenoxime peak in the chromatogram of the cefmenoxime working standard/Area of internal standard peak;

P_s=Cefmenoxime activity in the cefmenoxime working standard solution in micrograms per milliliter;

C_u=Milligrams of sample per milliliter of sample solution; and

m=Percent moisture content of the sample.

(2) *Sterility.* Proceed as directed in §436.20 of this chapter, using the method described in paragraph (e)(1) of that section, except in lieu of diluting fluid A use diluting fluid H.

(3) *Pyrogens.* Proceed as directed in §436.32(i) of this chapter, using a solution containing 60 milligrams per milliliter.

(4) *Moisture.* Proceed as directed in §436.201 of this chapter, using the sample preparation described in paragraph (d)(4) of that section and the titration procedure described in paragraph (e)(3) of that section, except:

(i) In lieu of 3 milliliters of anhydrous methanol solution, inject 20 milliliters of a formamide:methanol solution (2:1) into the container and shake to dissolve the contents (prior to use in preparation of the formamide:methanol solution, dry 500 grams of formamide over 20 grams of anhydrous sodium sulfate for 24 hours);

(ii) Rinse the syringe, needle, and immediate container with two separate 5-milliliter portions of anhydrous methanol, in lieu of one 3-milliliter portion of anhydrous methanol; and

(iii) In §436.201(e)(3) of this chapter, add a sufficient volume of the formamide:methanol solution (2:1) to cover the electrodes in the dry titrating vessel, in lieu of 20 milliliters of solvent A before starting the titration.

(5) *Identity.* Using a 0.0025-percent solution of the sample in 0.1*M* phosphate buffer, pH 6.8 and a suitable spectrophotometer, record the ultraviolet absorption spectrum from 220 to 310 nanometers. The spectrum compares qualitatively to that of the cefmenoxime working standard similarly tested.

(6) *Crystallinity.* Proceed as directed in §436.203(a) of this chapter.

[53 FR 13402, Apr. 25, 1988; 53 FR 19368, May 27, 1988]

§442.23a Sterile cephaloridine.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Cephaloridine is 7-[α-(2-thienyl)-acetamido]-3-(1-pyridyl-methyl)-3-cephem-4-carboxylic acid betaine. It is a white to off-white powder. It is so purified and dried that:

(i) Its potency is not less than 900 micrograms of cephaloridine per milligram. If it is packaged for dispensing, its potency is satisfactory if it is not less than 90 percent and not more than 115 percent of the number of milligrams of cephaloridine that it is represented to contain.

(ii) It is sterile.

(iii) It is nonpyrogenic.

(iv) [Reserved]

(v) Its loss on drying is not more than 2.5 percent.

(vi) Its pH in an aqueous solution is not less than 3.5 and not more than 6.

(vii) The specific rotation in an aqueous solution containing 10 milligrams of cephaloridine per milliliter at 25° C. is +48°±4°.

(viii) It is crystalline.

(ix) The ultraviolet absorption spectrum between the wavelengths of 220 and 310 nanometers compares qualitatively to that of the cephaloridine working standard. The ratio of the absorbance of the maximum at the wavelength of 240 nanometers to that of the shoulder at 255 nanometers is not less than 1.05 and not more than 1.17.

(2) *Labeling.* It shall be labeled in accordance with the requirements prescribed by §432.5 of this chapter.

(3) *Requests for certification; samples.* In addition to the requirements of §431.1 of this chapter, each such request shall contain:

(i) Results of tests and assays on the batch for potency, sterility, pyrogens, loss on drying, pH, specific rotation, crystallinity, and identity.

(ii) Samples of the batch:

(*a*) If the batch is packaged for repacking or for use as an ingredient in the manufacture of another drug:

(*1*) For all tests except sterility: 10 packages, each containing at least 500 milligrams.

(*2*) For sterility testing: 20 packages, each containing equal portions of approximately 300 milligrams.

(*b*) If the batch is packaged for dispensing:

(*1*) For all tests except sterility: A minimum of 13 immediate containers of the batch.

(*2*) For sterility testing: 20 immediate containers collected at regular intervals throughout each filling operation.

(b) *Tests and methods of assay*—(1) *Potency*—(i) *Sample preparation.* Dissolve an accurately weighed sample in sufficient 1.0 percent potassium phosphate buffer, pH 6.0 (solution 1), for the microbiological agar diffusion assay, distilled water for the iodometric assay or hydroxylamine colorimetric assay, to give a stock solution of convenient concentration; also if it is packaged for dispensing, reconstitute as directed in the labeling. Then using a suitable hypodermic needle and syringe, remove all of the withdrawable contents if it is represented as a single-dose container; or, if the labeling specifies the amount of potency in a given volume of the resultant preparation, remove an accurately measured representative portion from each container. Dilute with either solution 1 or distilled water as specified above to give a stock solution of convenient concentration.

(ii) *Assay procedures.* Use any of the following methods; however, the results obtained from the microbiological agar diffusion assay shall be conclusive.

(*a*) *Microbiological agar diffusion assay.* Proceed as directed in §436.105 of this chapter, diluting an aliquot of the stock solution with solution 1 to the reference concentration of 1.0 microgram of cephaloridine per milliliter (estimated).

(*b*) *Iodometric assay.* Proceed as directed in §436.204 of this chapter. If it is packaged for dispensing, dilute an aliquot of the stock solution with distilled water to the prescribed concentration.

NOTE: The 10 milliliters of 0.01*N* iodine must be added within 20 seconds after the addition of the 2.0 milliliters of 1.2*N* HCl, and the assay should be completed within 1 hour after the sample and standard are first put into solution. The working standard should be dried as described in §436.200(a) of this chapter.

(*c*) *Hydroxylamine colorimetric assay.* Proceed as directed in §436.205 of this chapter.

(2) *Sterility.* Proceed as directed in §436.20 of this chapter, using the method described in paragraph (e)(1) of that section.

(3) *Pyrogens.* Proceed as directed in §436.32(b) of this chapter, using a solution containing 50 milligrams of cephaloridine per milliliter.

(4) [Reserved]

(5) *Loss on drying.* Proceed as directed in §436.200(b) of this chapter.

(6) *pH.* Proceed as directed in §436.202 of this chapter, using an aqueous solution containing 250 milligrams of cephaloridine per milliliter. If it is packaged for dispensing, however, use the solution obtained after reconstituting the drug as directed in the labeling.

(7) *Specific rotation.* Dilute an accurately weighed sample with sufficient distilled water to give a concentration of approximately 10 milligrams of cephaloridine per milliliter. Proceed as directed in §436.210 of this chapter using a 2.0-decimeter polarimeter tube.

(8) *Crystallinity.* Proceed as directed in §436.203(a) of this chapter.

(9) *Identity.* Using a 0.0025-percent solution of the sample in water and a suitable spectrophotometer, record the ultraviolet absorption spectrum from 220 to 310 nanometers. The spectrum compares qualitatively to that of the cephaloridine working standard similarly tested.

[39 FR 19040, May 30, 1974, as amended at 43 FR 9800, Mar. 10, 1978; 50 FR 19919, May 13, 1985]

§442.25a Sterile cephalothin sodium.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Sterile cephalothin sodium is the sodium salt of the compound formed by reaction of thiophene-2-acetic acid with 7-amino-cephalosporanic acid. The 7-amino-cephalosporanic acid is obtained from a kind of cephalosporin. It is so purified and dried that:

(i) Its potency is not less than 850 micrograms of cephalothin per milligram on an anhydrous basis. If it is packaged for dispensing, its potency is satisfactory if it is not less than 90 percent and not more than 115 percent of